

Title 26 DEPARTMENT OF THE ENVIRONMENT

Subtitle 04 Regulation of Water Supply, Sewage Disposal, and Solid Waste

Chapter 11 Beneficial Use of Coal Combustion Byproducts

Authority: Environment Article, §9-289, Annotated Code of Maryland

Notice of Proposed Action

The Secretary of the Environment proposes to adopt new chapter **COMAR 26.04.11 Beneficial Use of Coal Combustion Byproducts.**

Statement of Purpose

The purpose of this action is to establish requirements for persons seeking to use coal combustion byproducts (CCBs) in the State, as authorized by and in accordance with the provisions of Environment Article Section 9-289 of the Annotated Code of Maryland.

Coal combustion byproducts include coal flyash, bottom ash, and related materials, and are known to the Department of the Environment to have the potential to pollute the air, surface water, and groundwater if they are mismanaged. They also have the potential to be constructively recycled and put to beneficial uses. These regulations establish the regulatory system under which persons may use CCBs, authorize the types of beneficial and other uses of CCBs which can be performed, establish the conditions under which the allowed uses of CCBs can be performed, and establish the procedures for seeking approval from the Department for those allowed uses of CCBs for those uses of CCBs where such approval is required. These regulations were required to be developed by December 31, 2009 by Section 9-289 of the Environment Article, Annotated Code of Maryland, and are needed to insure the safety of the environment and citizens of Maryland.

Comparison to Federal Standards

(Check one option)

X There is no corresponding federal standard to this proposed action.

Impact Statement

Part A

(check one option)

___ The proposed action has no economic impact.

or

X The proposed action has an economic impact.
(Complete the following form in its entirety)

I. Summary of Economic Impact.

The economic impact of the proposed action will only apply to those persons seeking to utilize coal combustion byproducts (CCBs), and will be more than offset by cost avoidance and reductions in the coal combustion byproducts generator fee.

The proposed regulation will result in some minor increases in cost to the generators or users of coal combustion byproducts in the form of additional chemical analytical work, for filing requests to utilize the material, or for filing periodic reports to the Department to document the amounts and locations that CCBs were recycled. However, in the past, the bulk of CCBs have either been disposed of or used in the reclamation of coal or other surface mines; the current regulations do not affect disposal or use in mines. In recent years the only uses of CCBs in Maryland that the Department is aware of other than mine reclamation, and that are covered in the current proposal, are 1) use of CCBs in cement and asphalt; 2) use of bottom ash as a substitute for aggregate in road construction; and 3) use of CCBs as a traction aid in winter

driving conditions.

By establishing rules for the safe uses of CCBs, the Department will ensure that reuse is protective of public health and the environment and generators of CCBs will be encouraged to reuse these materials rather than disposing of them. Because CCB materials are not widely recycled now except as an additive for cement, and because the reporting requirements for the cement plants were already imposed by the promulgation of COMAR 26.04.10 – Management of Coal Combustion Byproducts in December 1, 2008, the Department does not consider that the establishment of requirements for acceptable uses to create a significant economic impact.

In making a determination relating to the fitness of CCBs for some beneficial uses, the Department in these proposed regulations is principally relying on the Toxicity Characteristic Leaching Procedure (TCLP) test (specified in EPA Document SW-846, Method 1311). The TCLP test is widely used in industry as it is the test specified in State and federal regulations to determine whether a material is a hazardous waste by virtue of the concentration of potential pollutants that leach out of the material when subjected to the test. It is periodically performed on CCBs by the generators of CCBs in Maryland, so this is not a new requirement. The Department is proposing to require lower analytical limits for this test for CCBs which will be used in a loose form (e.g., not chemically and physically bound up, as when CCBs are added to concrete). This may increase the cost of the analyses. However, by allowing the material to be recycled instead of disposed of as an industrial waste, these costs should be more than offset by avoidance of disposal fees. As generators are not obliged to find a beneficial use for their CCBs, and are free to continue disposing of their CCBs or utilizing them for mine reclamation, this is

not considered to create a significant financial impact.

The proposed regulations require the review and approval of some types of proposals to utilize CCBs, and will require notification of the Department before initiating some uses, with the prior notification period being 5 or 60 days depending on the type of use and the volume of CCBs to be used. These notifications and approvals (where required) will allow the Department to deny or set conditions for certain types of uses, and to inspect the sites where CCB use is occurring, to ensure that air and water pollution is being adequately prevented. MDE already performs reviews and inspections of these types for other sorts of materials that are proposed to be recycled and in this case, the Legislature has provided a source of funding specifically for review, inspection, and compliance activities by the Department relating to coal combustion byproducts as authorized by and in accordance with the provisions of Environment Article Sections 9-281 through 286 inclusive of the Annotated Code of Maryland. Emergency regulations implementing these fees were promulgated in 2009, and the fees for FY 2010 have been collected. These costs are associated with the staff and necessary support equipment needed to conduct normal regulatory activities that include reviewing geologic and environmental information, performing engineering evaluations, conducting inspections, and reviewing environmental monitoring data. These activities were included in the promulgation of COMAR 26.04.10 – Management of Coal Combustion Byproducts in December 1, 2008, so the Department will not incur new costs through the issuance of these regulations.

**II. Types of
Economic Impacts.**

Revenue (R+/R-)
Expenditure (E+/E-) Magnitude

A. On issuing agency:

NONE

B. On other State agencies: NONE

C. On local governments: NONE

	Benefit (+)	
	Cost (-)	Magnitude
D. On regulated industries or trade groups:	(-)	\$330,000/year
	(+)	\$3,201,000/year

E. On other industries or trade groups: NONE

F. Direct and indirect effects on public: NONE

III. Assumptions. (Identified by Impact Letter and Number from Section II.)

D. It is noted that since the regulation only affects persons seeking to engage in the beneficial use of coal combustion byproducts, which is not made mandatory, the regulations would only affect those generators or other persons who desire to use these materials instead of disposing of them. For the generators of CCBs that may seek to use their CCBs instead of disposing of them, two principal and opposite effects were identified as possible effects of the regulations that might affect the generators of coal combustion byproducts (CCBs) in Maryland – 1) increased cost for analytical work and reporting requirements, and 2) avoidance of disposal costs through recycling of CCBs. It was assumed that some of the generators of CCBs may elect to use those CCBs in a manner provided for in the regulation within the State, and that some of these uses would be uses that require additional and more sensitive chemical analyses than are already performed.

In estimating the impact, it was assumed that the chemical analyses required would cost approximately \$250 more per analysis than the existing analyses. Based on research, it appears that the charge for the basic TCLP test for 8 metals varies among laboratories but is in the range

of \$150-\$300. It is therefore assumed that the required test, for an expanded suite of chemicals with minimum reporting values at lower concentrations, would cost approximately \$500 per sample. It is noted that this is significantly less than the cost of a full TCLP scan, which includes a variety of organic chemicals including volatile organic chemicals (VOCs), polychlorinated biphenyls (PCBs) and pesticides which are not likely to be present in CCBs as they have been burned at high temperatures, and were not likely to contain those compounds in the first place; a full TCLP analytical suite can run approximately \$3,000 per sample. Full TCLP tests are routinely required for other industrial wastes but only analyses for metals and some other inorganic chemicals would be required by the proposed regulation, which greatly limits the cost to the regulated community.

As the major CCB generators in Maryland are making plans to continue using disposal and mine-reclamation options for managing the CCBs they generate, it is assumed that only a fraction of the CCBs generated each year will be recycled. However, this fraction is anticipated to increase. Therefore, it is assumed that an average of 33% of the approximately 2 million tons of ash being generated will be beneficially used each year in the next 5 years, or approximately 660,000 tons. Although no specific frequency for characterization tests is established in the regulation, it will be assumed that one characterization test will be required for every 1000 tons of ash produced. This would entail 660 tests to be performed across the industry annually, for an additional cost of $(660 \text{ tests} \times \$500 =) \$330,000$.

However, by choosing beneficial use instead of disposal for this material, the industry can avoid significant costs. In its fiscal estimate for the promulgation of COMAR 26.04.10 – Management of Coal Combustion Byproducts, originally proposed in December, 2007, the Department assumed an annual disposal cost for CCBs of \$9.7 million for 2 million tons of ash,

or \$4.85 per ton. Assuming transportation costs to be similar whether the material is used or disposed of, and that the material is provided free to the user, the avoided cost for the assumed 660,000 tons is (660,000 tons x \$4.85/ton =) \$3,201,000.

Additional cost avoidance for the purchase of the materials that the CCBs replace – largely cement or aggregate – is also anticipated, but without knowing the precise nature and type that the industry would choose to use, the precise magnitude of this benefit to the industry cannot be adequately quantified.

Economic Impact on Small Businesses

X The proposed action has minimal or no economic impact on small businesses.

Impact on Individuals with Disabilities

X The proposed action has no impact on individuals with disabilities.

Opportunity for Public Comment

Comments may be sent to Gail Castleman, Department of the Environment, Land Management Administration, 1800 Washington Blvd., Baltimore MD 21230, or fax to (410) 537-3156 or email to gcastleman@mde.state.md.us. Comments will be accepted until the close of business on March 29, 2010.

Part C

(For legislative use only; not for publication)

- A. Fiscal Year in which regulations will become effective: FY 2011.
- B. Does the budget for fiscal year in which regulations become effective contain funds to implement the regulations?
- Yes X
- C. If “yes”, state whether general, special (exact name), or federal funds will be used:
Special Funds – State Coal Combustion By-Products Management Fund (see Section 9-281-285 of the Environment Article, *Annotated Code of Maryland*.).
- D. If “no”, identify the source(s) of funds necessary for implementation of these regulations:
-
- E. If these regulations have no economic impact under Part A, indicate reason briefly:
- N/A.
- F. If these regulations have minimal or no economic impact on small businesses under Part B, indicate the reason.

The proposed action has minimal or no economic impact on small businesses.

The principal effect of these regulations will be on large-scale generators or users of coal combustion byproducts such as the electric power utilities, which are not small businesses. It is possible that some small businesses not now engaged in CCB use may choose to become involved in the future, but the economic impact on these small businesses cannot be accurately estimated although is expected to be minimal or even positive for the reasons stated in the analyses presented for the industry as a whole.

DRAFT

Beneficial Use of Coal Combustion Byproducts Regulations

Title 26 DEPARTMENT OF THE ENVIRONMENT

Subtitle 04 REGULATION OF WATER SUPPLY, SEWAGE DISPOSAL, AND SOLID WASTE

Chapter 11: Beneficial Use of Coal Combustion Byproducts.

Authority: Environment Article, §9-289, Annotated Code of Maryland

.01 Purpose, Scope and Applicability.

A. The purpose of this chapter is to provide for the regulation of coal combustion byproducts that are being employed in a beneficial use or other use, including under §15-407 of the Environment Article, Annotated Code of Maryland, as amended, and to establish certain requirements pertaining to the beneficial use, or other use of coal combustion byproducts, including the use of coal combustion byproducts in manufacturing, construction, and related industrial and commercial processes. Beneficial use does not include the use of coal combustion byproducts in mine reclamation.

B. Except as otherwise specifically provided, this chapter applies to persons engaged in the handling, processing, beneficial use, or other use of coal combustion byproducts.

C. Compliance with the provisions of this chapter does not relieve a person from the duty to comply with any other applicable federal, State, and local laws, regulations, and ordinances.

.02 Definitions.

A. In this chapter, the following terms have the meanings indicated.

B. Terms Defined.

(1) "Appropriate Leachability Test" means the Toxicity Characteristic Leaching Procedure (TCLP) Test as specified in EPA Document SW-846, Method 1311, or the Synthetic Precipitation Leaching Procedure (SPLP), EPA Method 1312, if allowed by the Department, or another protocol specifically approved by the Department for the purposes of this chapter.

(2) Beneficial Use.

(a) "Beneficial use" means the use of coal combustion byproducts in a manufacturing process to make a product, or as a substitute for a raw material or commercial product, which, in either case, does not create an unreasonable risk to public health or the environment as determined by the Department.

(b) "Beneficial use" does not include the use of coal combustion byproducts in a mining operation or in mine reclamation activities.

(3) Bottom Ash

(a) "Bottom ash" means the coarse-grained residue of coal combustion that accumulates on the grate, sides, and bottom of the combustion chamber in a coal burning furnace.

(b) "Bottom ash" does not include the fine particles removed from flue gas by filtering or other air pollution control process, except to the extent that fine particles cling to or are included with the coarse-grained residue.

(4) Coal Combustion Byproducts.

(a) "Coal combustion byproducts" means the residue generated by or resulting from the burning of coal.

(b) "Coal combustion byproducts" includes fly ash, bottom ash, boiler slag, pozzolan, and other solid residuals removed by air pollution control devices from the flue gas and combustion chambers of coal burning furnaces and boilers, including flue gas desulfurization material and other solid residuals recovered from flue gas by wet or dry methods.

(5) Construction Project.

(a) "Construction Project" means the location and activities comprising the construction of a building, earthwork, or structure.

(b) "Construction Project" activity includes the excavation, filling, and grading of land, the installation of utilities and drainage controls, the construction of temporary or permanent buildings or other structures, the establishment of vegetative cover, ornamental landscaping, and related activities.

(c) "Construction Project" location includes work on a single property or parcel of land, or may encompass activities on more than one parcel or property that are not necessarily contiguous, for example in the construction of a large complex of structures like a shopping center or industrial park, or a road that may cross numerous nonadjacent parcels.

(6) "Department" means the Department of the Environment.

(7) "Disposal" means the discarding or abandonment of coal combustion byproducts so that they are not recycled or used, as determined by the Department.

(8) "Dispose" means any action that results in a disposal.

(9) "Extractive Process" means a chemical process by which coal combustion byproducts are subjected to leaching to remove soluble constituents.

(10) "Flue gas desulfurization material" means the coal combustion byproducts derived from processes that remove sulfur from the flue gases produced by burning coal following the removal of particulate material.

(11) Generator.

(a) "Generator" means a person whose operations, activities, processes, or actions create coal combustion byproducts.

(b) "Generator" does not include a person who only generates coal combustion byproducts by burning coal at a private residence.

(12) "Leachate" means liquid that:

(a) Has percolated through, has drained from, or has been generated by coal combustion byproducts; and

(b) Has extracted dissolved material, miscible material, suspended material, or all of these from the coal combustion byproducts.

(13) Macroencapsulation.

(a) "Macroencapsulation" means the solidification of a quantity of a material of smaller particle size into a larger block of a solid character, having a lower permeability and a greatly reduced surface area subject to leaching.

(b) "Macroencapsulation" includes the inclusion of fine-grained materials into larger nonfriable solid objects such as pre-cast cement blocks or structures.

(c) "Macroencapsulation" includes the casting of a quantity of fine particles into particles or pellets of larger particle size, for example when a material that occurs as a powder is converted into durable gravel-sized pellets through sintering or cementing, or mixing sand-sized particles with cement or resin to make a brick.

(14) "Microencapsulation" means the chemical or physical encapsulation of compounds making up a material at the molecular level, so that the leachability of soluble chemicals comprising the compounds, or present in the material in a releasable form, is reduced.

(15) "Nonfriable" means a solid material that is not readily crumbled into smaller pieces and is hard enough to resist being broken up by human hands not employing tools.

(16) "Person" means an individual, corporation, company, association, society, firm, partnership, joint venture, joint stock company, or other entity, or a federal, State, or local government or governmental unit, or any political subdivision of this State or any of its agencies or instrumentalities.

(17) "Pozzolan" has the meaning stated in §15-407 of the Environment Article, Annotated Code

of Maryland.

(18) “Recycling” has the meaning stated in §9-1701 of the Environment Article, Annotated Code of Maryland.

(19) “Sham recycling” means an activity that has the appearance of a legitimate use of coal combustion byproducts but is, in fact, a disposal of coal combustion byproducts.

(20) “Significantly leachable material” means a coal combustion byproduct or material containing coal combustion byproducts that leaches metals or other substances at concentrations that exceed the Maximum Contaminant Levels established in COMAR 26.04.01.06 or .07 for that chemical when subjected to an appropriate leachability test.

(21) Solidification.

(a) “Solidification” means a process that converts a loose, liquid or semisolid material into a solid nonfriable material and restricts the migration of chemicals from the solidified material by decreasing the surface area exposed to leaching and containing the loose, liquid, or semisolid material in solid low-permeability materials.

(b) “Solidification” can be accomplished by a chemical reaction between a material and binding or solidifying reagents, or by mechanical processes, such as mixing with a cementitious, asphaltic, or resinous matrix to turn a quantity of material exhibiting the characteristics of a dust or silt into larger particle sizes such as a pellet or a solid block.

(22) “Solidified” means, with respect to a material, when the material has undergone a

solidification process that is acceptable to the Department.

(23) "Solid waste" has the meaning stated in §9-101 of the Environment Article, Annotated Code of Maryland.

(24) "Solid waste acceptance facility" has the meaning stated in COMAR 26.04.07.02.

(25) "Stabilization" means a process or processes, such as an extractive process, macroencapsulation, microencapsulation, solidification, or other process acceptable to the Department, that reduces the concentration of soluble constituents that would otherwise leach from a substance, so that the resulting material is not a significantly leachable material.

(26) Stabilized.

(a) "Stabilized" means, with respect to a material, when the material has undergone a stabilization process that is acceptable to the Department.

(b) "Stabilized" includes, with respect to a material, a material that is not a significantly leachable material as it exists, without undergoing stabilization.

(27) "State" means the State of Maryland.

.03 General Restrictions and Specifically Prohibited Acts; Storage of Coal Combustion Byproducts.

A. General Restrictions and Specifically Prohibited Acts.

(1) A person using or beneficially using coal combustion byproducts shall comply with the provisions of COMAR 26.04.10.03 - General Restrictions and Specifically Prohibited Acts.

(2) Sham Recycling. A person may not engage in sham recycling.

B. Storage of Coal Combustion Byproducts. A person engaged in the use or beneficial use of coal combustion byproducts in a manner that involves the storage of coal combustion byproducts shall comply with the provisions of COMAR 26.04.10.05 - Storage.

.04 General Provisions.

A. Beneficial Use of Coal Combustion Byproducts.

(1) The uses of coal combustion byproducts specified under Regulations .05 and .06 of this chapter are beneficial uses.

(2) The Department may determine whether a use of coal combustion byproducts other than a use specified under Regulation .05 or .06 of this chapter is a beneficial use and may provide general or specific approval for this use.

(3) A general or specific approval to use coal combustion byproducts under the provisions of this chapter does not relieve the user of the coal combustion byproducts from the obligation to obtain any other applicable local, State or federal approval required to use coal combustion byproducts or to perform the intended use or activity, such as, for example, sediment and erosion control plan approvals at the local or State level; State or federal wetlands permits; county or other local grading permits; local or State stormwater plan approvals; and local zoning approvals.

(4) A general or specific approval to use coal combustion byproducts under the provisions of this chapter is for environmental regulatory purposes only and does not in any way supplant the need for individual site characterization or design engineering appropriate for the scope and site-specific conditions that pertain to the particular use or construction project where use of coal combustion byproducts is intended.

(5) If a regulation in this chapter requires that the coal combustion byproducts being used, or a product containing coal combustion byproducts, are not a significantly leachable material, the generator or user of the coal combustion byproducts shall submit documentation to the Department that the coal combustion byproducts, or product containing coal combustion byproducts, are not a significantly leachable material. For an individual construction project or use, the documentation may be provided on an individual basis. For an ongoing process, the documentation may be submitted on a routine basis on a schedule approved by the Department. The documentation shall consist of the following information:

(a) The source(s), type(s) and volume of coal combustion byproducts used or proposed to be used;

(b) If stabilization is required to render a product containing coal combustion byproducts not a significantly leachable material, a description of the process by which the coal combustion byproducts are stabilized;

(c) Sufficient and appropriate representative analytical data, in accordance with §A(6) of this regulation, to demonstrate that the coal combustion byproducts or product containing coal combustion byproducts are not a significantly leachable material to the satisfaction of the Department; and

(d) Any other information that may be required by the Department to evaluate the

environmental performance of the coal combustion byproducts or product containing coal combustion byproducts in the proposed use.

(6) To support a demonstration that the coal combustion byproducts are not a significantly leachable material, a demonstration shall include the following analyses:

(a) A copy of a solids analysis of the coal combustion byproducts, performed within the last 60 days, which at a minimum provides analysis for the following parameters and practical quantitation limits (PQLs):

ELEMENTS AND INDICATOR PARAMETERS PQL(mg/kg)

<i>(i) Total Aluminum</i>	<i>40</i>
<i>(ii) Total Antimony</i>	<i>1</i>
<i>(iii) Total Arsenic</i>	<i>1</i>
<i>(iv) Total Barium</i>	<i>1</i>
<i>(v) Total Beryllium</i>	<i>1</i>
<i>(vi) Total Boron</i>	<i>20</i>
<i>(vii) Total Cadmium</i>	<i>1</i>
<i>(viii) Total Calcium</i>	<i>1</i>
<i>(ix) Total Chromium</i>	<i>1</i>
<i>(x) Total Cobalt</i>	<i>1</i>
<i>(xi) Total Copper</i>	<i>2</i>
<i>(xii) Total Iron</i>	<i>500</i>

<i>(xiii) Total Lead</i>	<i>1</i>
<i>(xiv) Total Lithium</i>	<i>1</i>
<i>(xv) Total Magnesium</i>	<i>100</i>
<i>(xvi) Total Manganese</i>	<i>1</i>
<i>(xvii) Total Mercury</i>	<i>0.2</i>
<i>(xviii) Total Molybdenum</i>	<i>10</i>
<i>(xix) Total Nickel</i>	<i>5</i>
<i>(xx) Total Potassium</i>	<i>100</i>
<i>(xxi) Total Selenium</i>	<i>4</i>
<i>(xxii) Total Silver</i>	<i>1</i>
<i>(xxiii) Total Sodium</i>	<i>100</i>
<i>(xxiv) Total Sulfur</i>	<i>10</i>
<i>(xxv) Total Thallium</i>	<i>50.0</i>
<i>(xxvi) Total Vanadium</i>	<i>4</i>
<i>(xxvii) Total Zinc</i>	<i>10</i>

(b) A copy of a representative number of appropriate leachability tests of the coal combustion byproducts required by the Department, performed within the last 60 days, which at a minimum includes analysis for the following:

(i) Aluminum

- (ii) *Antimony*
- (iii) *Arsenic*
- (iv) *Barium*
- (v) *Beryllium*
- (vi) *Boron*
- (vii) *Cadmium*
- (viii) *Calcium*
- (ix) *Chromium*
- (x) *Cobalt*
- (xi) *Copper*
- (xii) *Iron*
- (xiii) *Lead*
- (xiv) *Lithium*
- (xv) *Magnesium*
- (xvi) *Manganese*
- (xvii) *Mercury*
- (xviii) *Molybdenum*
- (xix) *Nickel*
- (xx) *Potassium*
- (xxi) *Selenium*

(xxii) Silver

(xxiii) Sodium

(xxiv) Sulfur

(xxv) Thallium

(xxvi) Vanadium

(xxvii) Zinc

(c) The practical quantitation limit for the appropriate leachability tests shall be no greater than the Maximum Contaminant Level as specified in COMAR 26.04.01.06 for the measured parameter, where one exists, or as otherwise specified by the Department.

(7) The Department may specify the analytical test methods, analytes, analytical sensitivity, number of samples, and testing frequency, and may require the generator or user providing the analytical data to provide a sampling and analytical plan for review and approval before making a determination concerning a proposed use.

B. Denial, Suspension and Revocation of Approvals.

(1) The Department may deny, suspend or revoke any general or specific approval of a use of coal combustion byproducts for any violation of COMAR 26.04.10, this chapter, or any condition imposed by the Department on the use of coal combustion byproducts, or for other good cause.

(2) The denial, suspension or revocation of such an approval shall be effective

immediately upon notification by the Department.

(3) The denial, suspension or revocation may be appealed by directing a written request for an appeal hearing to the Director of the Department's Land Management Administration within 10 days of receipt of notification of the suspension or revocation. All hearings will be conducted in accordance with the Administrative Procedure Act, Section 10-201, et. seq., State Government Article, Annotated Code of Maryland.

(4) The Department may alter or remove the suspension or revocation upon correction of the violation or for other good cause.

(5) Issuance, alteration, or removal of a notice of suspension or revocation of an approval under this chapter shall not preclude the Department from taking any other enforcement action for violation of any applicable State law or regulation.

C. Notifications. Unless otherwise specified by the Department, notifications required by this chapter shall be directed to:

Administrator, Solid Waste Program

Maryland Department of the Environment

1800 Washington Blvd., Suite 605

Baltimore MD 21230-1719

Fax No. (410) 537-3842

D. Other Uses.

(1) If a person proposes to use coal combustion byproducts in a manner that is not a use specified under Regulation .05 or .06 of this chapter, the person shall submit a request to use coal combustion byproducts to the Department and shall obtain the approval of the Department before initiating the use.

(2) The Department may require a person proposing to use coal combustion byproducts in a manner that is not a use specified under Regulations .05 or .06 of this chapter to submit any information required for the Department to determine whether the proposed use would adversely impact the public health, safety, or comfort, or the quality of the environment.

(3) Unless otherwise provided by law, the Department may approve, deny, or conditionally approve a request for a use that is not a use specified under Regulation .05 or .06 of this chapter.

(4) If a use that is not a use specified under Regulation .05 or .06 of this chapter is conditionally approved, the Department shall state the conditions of approval, including any applicable permit requirements, and the person using the coal combustion byproducts under that approval shall comply with the stated conditions.

(5) The Department may determine that an activity or proposed activity involving coal combustion byproducts is sham recycling and may deny a request or require that an activity in progress be stopped.

(6) The Department may require public notification or a public meeting concerning a proposed use of coal combustion byproducts before making a determination concerning the proposed use.

(7) The requirements of Regulation .07 of this chapter shall be applicable to a proposed use to the extent specified by the Department.

E. Unless otherwise provided by law, at its discretion, the Department may make a determination relative to a use or proposed use of coal combustion byproducts under this regulation, or deny or place restrictions on a use or proposed use of coal combustion byproducts under this regulation, based on information provided to or obtained by the Department from any source.

.05 Approved Beneficial Uses of Solidified Coal Combustion Byproducts.

A. Approvals.

(1) A person may use solidified coal combustion byproducts without obtaining a specific approval from the Department if the coal combustion byproducts are used in accordance with this regulation .

(2) At its discretion, the Department may make a determination relative to a use or proposed use of coal combustion byproducts under this regulation, or deny or place restrictions on a use or proposed use of coal combustion byproducts under this regulation, based on information provided to or obtained by the Department from any source.

B. Use of Coal Combustion Byproducts in Cement, Concrete, or Asphalt. Coal combustion byproducts may be used as an additive to, or in place of constituents of, cement, concrete or asphalt if the conditions in this section are met.

(1) The resulting product shall be produced by a solidification process and harden or cure into a nonfriable solid mass that is not a significantly leachable material and that is not readily subject to erosion as a result of its intended use;

(2) The physical and chemical characteristics of the coal combustion byproducts to be used shall be evaluated and considered as part of the design of the product to ensure that the inclusion of the coal combustion byproducts does not adversely impact the fitness of the resulting product for its intended use;

(3) The generator or user of the coal combustion byproducts shall submit documentation to the Department in accordance with Regulation .04A(5) of this chapter; and

(4) The user of the coal combustion byproducts shall meet the user notification requirements of Regulation .07B of this chapter.

C. Use of Coal Combustion Byproducts as a Filler in Gypsumboard. Coal combustion byproducts may be used as an additive to, or in place of constituents of, gypsiferous wallboard and wallboard spackling and coating compounds used in interior building construction if the conditions in this section are met.

(1) The resulting product shall not be a significantly leachable material;

(2) The physical and chemical characteristics of the coal combustion byproducts to be used shall be evaluated and considered as part of the design of the product to ensure that the inclusion of the coal combustion byproducts does not adversely impact the fitness of the resulting product for its intended use, including safe use in an occupied structure;

(3) The generator or user of the coal combustion byproducts shall submit documentation to the Department in accordance with Regulation .04A(5) of this chapter; and

(4) The user of the coal combustion byproducts shall meet the user notification

requirements of Regulation .07B of this chapter.

D. Use of Coal Combustion Byproducts as a Filler in Plastic Products. Coal combustion byproducts may be used as an additive to or filler in plastic and resin products if the conditions in this section are met.

(1) The physical and chemical characteristics of the coal combustion byproducts to be used shall be evaluated and considered as part of the design of the product to ensure that the inclusion of the coal combustion byproducts does not adversely impact the fitness of the resulting product for its intended use;

(2) The coal combustion byproducts shall be subjected to a process of macroencapsulation so that the particles of coal combustion byproducts are completely coated by plastic, such that when the plastic is hardened or cured the product is not a significantly leachable material, and coal combustion byproduct particles cannot escape from the product in normal use of the product;

(3) The generator or user of the coal combustion byproducts shall submit documentation to the Department in accordance with Regulation .04A(5) of this chapter; and

(4) The user of the coal combustion byproducts shall meet the user notification requirements of Regulation .07B of this chapter.

E. Use of Coal Combustion Byproducts in Roofing Materials. Coal combustion byproducts may be used as an additive to or filler in roofing materials or in the grains or particles that are used to coat roofing shingles and other roofing materials if the conditions in this section are met.

- (1) The physical and chemical characteristics of the coal combustion byproducts to be used shall be evaluated and considered as part of the design of the product to ensure that the inclusion of the coal combustion byproducts does not adversely impact the fitness of the resulting product for its intended use;*
- (2) The coal combustion byproducts shall be subjected to a process of microencapsulation so that the roofing materials, grains or particles, or other roofing products, are not a significantly leachable material, and coal combustion byproducts cannot escape from the product in normal use of the product;*
- (3) The generator or user of the coal combustion byproducts shall submit documentation to the Department in accordance with Regulation .04A(5) of this chapter; and*
- (4) The user of the coal combustion byproducts shall meet the user notification requirements of Regulation .07B of this chapter.*

.06 Approved Beneficial Uses of Coal Combustion Byproducts in an Unconsolidated Form.

A. General.

(1) A person may use coal combustion byproducts in an unconsolidated form for the uses described in this regulation if the person provides notification to the Department of the intended use, and obtains approval from the Department for the intended use, except where specifically noted.

(2) Before any use of coal combustion byproducts under this regulation, the generator or user of the coal combustion byproducts shall submit documentation to the Department that the coal combustion byproducts are not a significantly leachable material in accordance with Regulation .04A(5) of this chapter.

(3) Before any use of coal combustion byproducts under this regulation, the generator or user of the coal combustion byproducts shall comply with the public notification provisions of Regulation .07 of this chapter, to the extent that they are applicable to the proposed use.

(4) Unless otherwise provided by law, at its discretion, the Department may make a determination relative to a use or proposed use of coal combustion byproducts under this regulation, or deny or place restrictions on a use or proposed use of coal combustion byproducts under this regulation, based on information provided to or obtained by the Department from any source.

B. Use of Bottom Ash as a Substitute for Aggregate. Bottom ash may be used as a structural aggregate beneath asphalt and concrete roads, parking lots, and other paved surfaces if the conditions in this section are met.

(1) The bottom ash shall be stabilized before use;

(2) The physical and chemical characteristics of the coal combustion byproducts to be used shall be evaluated and considered as part of the engineering design of the construction project and found to be acceptable by the design engineer;

(3) The total depth of the bottom ash placed may not exceed 8 inches at any location and may not be placed outside of the area to be covered by pavement;

(4) The bottom ash may not be placed where it will be subject to intrusion by groundwater or surface water, and shall be placed at least 3 feet above the maximum expected groundwater elevations at all locations of bottom ash placement;

(5) The bottom ash shall be covered by the intended pavement (for example, concrete or asphalt) within one week of placement;

(6) The pavement placed over the bottom ash shall be continuous in all areas that overlie bottom ash and shall not be a material that is intended to allow the infiltration of water, such as “pervious concrete” or “porous asphalt” products;

(7) Appropriate procedures that may include moistening, the use of temporary covers, and tacking agents shall be employed to prevent the release of dust from exposed bottom ash;

(8) Appropriate protocols such as use of tacking agents, interim stabilization techniques, silt fences and other sediment controls shall be employed to prevent the uncontrolled erosion and discharge of particles of exposed bottom ash;

(9) If required by COMAR 26.08.04.01, a valid General or Individual Permit for Stormwater Discharges Associated with Construction Activity, or other applicable discharge permit, shall be issued for the area where bottom ash is to be placed;

(10) If less than 200 tons of bottom ash is intended to be used for the purposes described in this section, the person proposing to use the bottom ash shall provide written notice to the Department under Regulation .07 of this chapter of its intent to use bottom ash under this section at least 5 business days before the first storage or placement of the bottom ash at the construction project or other site of use; and

(11) If 200 or more tons of bottom ash is intended to be used for the purposes described in this section, the person proposing to use the bottom ash shall provide written notice to the Department under Regulation .07 of this chapter of its intent to use bottom ash under this section at least 60 days before the intended date of first storage or placement of bottom ash at the construction project or other site of use, and shall obtain the written approval of the Department

for the proposed use before the use of coal combustion byproducts begins.

(12) A person proposing to use bottom ash under this section shall meet all requirements of Regulation .07 of this chapter applicable to the proposed use before the date of first storage or placement of bottom ash at a construction project or other site of use.

C. Use of Bottom Ash as a Pipe Bedding. Bottom ash may be used as a pipe bedding beneath pipes intended to convey liquids if the conditions in this section are met.

(1) The bottom ash shall be stabilized before use;

(2) The physical and chemical characteristics of the bottom ash to be used shall be evaluated and considered as part of the engineering design of the construction project, and found to be acceptable by the design engineer;

(3) The total depth of bottom ash placed may not exceed 8 inches at any location;

(4) The bottom ash may not be placed where it will be subject to intrusion by groundwater or surface water, and shall be placed at least 3 feet above the maximum expected groundwater elevation at the location of placement;

(5) Any pipe intended to convey liquid shall be installed with seals to prevent seepage of liquid from the pipe into the bottom ash;

(6) If required by COMAR 26.08.04.01, a valid General or Individual Permit for Stormwater Discharges Associated with Construction Activity shall be issued for the area where bottom ash is to be placed before the use of bottom ash begins;

(7) If less than 200 tons of bottom ash is intended to be used for the purposes described in this section, the person proposing to use the bottom ash shall provide written notice to the Department under Regulation .07 of this chapter of its intent to use bottom ash under this section at least 5 business days before the first storage or placement of bottom ash at the construction project or other site of use; and

(8) If 200 or more tons of bottom ash is intended to be used for the purposes described in this section, the person proposing to use the bottom ash shall provide written notice to the Department under Regulation .07 of this chapter of its intent to use bottom ash under this section at least 60 days before the intended date of first storage or placement of bottom ash at the construction project or other site of use, and shall obtain the written approval of the Department for the proposed use before the use of coal combustion byproducts begins.

(9) A person proposing to use bottom ash under this section shall meet all requirements of Regulation .07 of this chapter applicable to the proposed use before the date of first storage or placement of bottom ash at a construction project or other site of use.

D. Use of Bottom Ash as a Winter Traction Control Aid. Bottom ash may be applied to roads, highways, parking lots and other paved surfaces as a winter traction control aid if the conditions in this section are met.

(1) The surfaces to which the bottom ash is applied shall be paved with asphalt or concrete;

(2) The bottom ash shall only be applied during the period 24 hours before, during, and 24 hours after a winter weather event comprised of snow, sleet, and/or ice;

(3) The bottom ash shall be applied at a rate appropriate for use as a traction control aid and may not be applied at a rate that contributes to excessive runoff of sediment;

(4) Before use on publicly-owned highways, streets or thoroughfares, the use of the bottom ash as a traction aid shall be approved by the local or State highway officials responsible for the maintenance and safety of the roads and highways to which the bottom ash will be applied;

(5) The bottom ash shall be stabilized so that it will not leach toxic substances into runoff to surface water or, when washed off roadbeds to surface water, will not result in a violation of water quality standards for any water quality criterion;

(6) The bottom ash used as a winter traction aid shall be screened or otherwise sized so

that no more than 2% of the particles will pass through a standard #30 screen with apertures of no greater than 0.6 micron (0.0236 inches); and

(7) The user of bottom ash shall notify the Department of the user's intent to use bottom ash as a traction aid before initiating its use and shall provide a report to the Department of the amount used and general locations of use in a given winter weather event within 30 days after the first use of the material in the event.

.07 Public and Local Government Notification and Comment:

A. Applicability. In addition to the other requirements of this chapter, a person proposing to use coal combustion byproducts under this chapter in the State shall comply with the applicable notification provisions of this regulation.

B. A manufacturer of cement, concrete, asphalt, wallboard, roofing materials or plastic containing coal combustion byproducts in accordance with Regulation .05 of this chapter shall take appropriate steps to notify users and potential users of its products that the product contains coal combustion byproducts. Appropriate steps include content labeling on packaging, identification of the presence of coal combustion byproducts in written and electronically-available (for example, web page) product specifications, or written notification via printed content provided to users of bulk loads of a product. The Department may post a notice of the use on the Department's internet website.

C. Winter Traction Control Use. A person proposing to use coal combustion byproducts as a winter traction control aid shall notify the Department in accordance with Regulation .06D(6) of this chapter. The Department may post a notice of the use on the Department's internet website.

D. Other Uses of Unconsolidated Coal Combustion Byproducts.

(1) Except as otherwise required by this chapter, a person intending to use any amount of unconsolidated coal combustion byproducts shall notify the Department in writing at least 5 business days before the first storage or placement of coal combustion byproducts at the site of intended use. The notice shall include the name of the user, the type of coal combustion

byproducts intended to be used, the location and type of intended use (for example, road bedding, pipe bedding, etc.), and the amount of material that is intended to be used.

(2) When notified of a proposal to use more than 200 tons of unconsolidated coal combustion byproducts for any use and for other proposed uses for which the Department deems there is public interest, the Department may:

(a) Post a notice of the use on the Department's internet website;

(b) Post a notice and opportunity for a public meeting on the Department's internet website;

(c) Hold a public meeting concerning one or more proposed uses at a time and location the Department deems appropriate;

(d)) Notify the Health Officer of the county in which the coal combustion byproducts are proposed to be used;

(e) Require the person proposing to use coal combustion byproducts to place a copy of the notice, with any pertinent plans, sample results, operating procedures, and location maps, in a local library proximal to the site of the proposed use, or in another local repository acceptable to the Department;

(f) Require the person proposing to use coal combustion byproducts to delay the use until the Department has approved the proposal in writing; and

(g) Require the person proposing to use coal combustion byproducts to cover all costs relating to providing public notice or comment on the proposed use and holding a public

meeting, including but not limited to costs associated with advertising a public meeting; procurement of a suitable hall or auditorium for the purpose of holding a meeting; equipment rental, such as seating and public address equipment; and the creation of a transcript of minutes, in a manner acceptable to the Department.

(3) When notified of a proposal to use more than 2000 tons of unconsolidated coal combustion byproducts the Department shall:

(a) Post a notice and opportunity for a public meeting on the Department's internet website;

(b) If requested within the timeframe established for such a request by the Department, hold a public meeting concerning one or more proposed uses at a time and location the Department deems appropriate;

(c) Notify the Health Officer of the county in which the coal combustion byproducts are proposed to be used;

(d) Notify the President of the County Council or Board of County Commissioners of the county in which the proposed use is located;

(e) Require the person proposing to use coal combustion byproducts to place a copy of the notice, with any pertinent plans, sample results, operating procedures, and location maps, in a local library proximal to the site of the proposed use, or in another local repository acceptable to the Department; and

(f) Require the person proposing to use coal combustion byproducts to cover all costs relating to providing public notice or comment on the proposed use and holding a public meeting, including but not limited to costs associated with advertising a public meeting; procurement of a suitable hall or auditorium for the purpose of holding a meeting; equipment rental, such as seating and public address equipment; and the creation of a transcript of minutes, in a manner acceptable to the Department.

E. Determinations, Denials, and Restrictions on Uses of Coal Combustion Byproducts. Unless otherwise provided by law, at its discretion, the Department may make a determination relative to a use or proposed use of coal combustion byproducts, or deny or place restrictions on a use or proposed use of coal combustion byproducts, based on information provided to or obtained by the Department from any source.

.08 Disposal of Products or Raw Materials Containing Coal Combustion Byproducts

A. Household Product Exemption. This regulation does not apply to coal combustion byproducts that are used in a household product in a solidified form in accordance with Regulation .05 of the chapter.

B. Solidified Product Exemption. This regulation does not apply to solidified materials created in accordance with Regulation .05 of this chapter, unless they have been ground, shredded, pulverized, or otherwise subject to a process that renders them a significantly leachable material.

C. Disposal of materials containing coal combustion byproducts. A person may not dispose of products or raw materials containing coal combustion byproducts except as provided in this regulation or COMAR 26.04.10.04.

D. Proper Disposal of Products or Raw Materials Containing Coal Combustion Byproducts. Products or raw materials that contain coal combustion byproducts are considered properly disposed of when they are accepted and managed by one of the following:

(1) A solid waste acceptance facility located in the State that is authorized to accept coal combustion byproducts for disposal; or

(2) A solid waste acceptance facility in another state that is authorized to accept coal combustion byproducts for disposal.

E. Recycling. A person may engage in recycling or reuse of a product or raw material containing coal combustion byproducts in a manner that is in accordance with this chapter and COMAR 26.04.10, and does not create a hazard to the public health, safety, comfort, or the quality of the environment.

.09 Environmental Monitoring.

A. The Department may require environmental monitoring in connection with the beneficial use or other use of coal combustion byproducts under this chapter. If the Department determines that environmental monitoring is required at a construction project or other site of use of coal combustion byproducts, a person who proposes to use coal combustion byproducts shall submit a monitoring plan to the Department for review and approval.

B. The monitoring plan shall be prepared in accordance with the following requirements and include at least the following information:

(1) A description of a system for monitoring the quality of the waters of the State around and beneath the site of use, including:

(a) A description of the number, location, and types of monitoring wells and sampling stations;

(b) The methods of construction of the monitoring wells; and

(c) A monitoring well location map;

(2) A schedule for the frequency of the analyses;

(3) A description of sampling and analyses procedures;

(4) A list of parameters to be monitored;

(5) A schedule of reporting periods; and

(6) Other information as the Department may require.

C. Monitoring and Reporting Requirements.

(1) The person submitting the monitoring plan shall submit to the Department a report on water quality on a semi-annual basis, or at such other times as outlined in the approved monitoring plan, containing summary and interpretative discussion of all analyses of the chemical quality of ground water from all of the monitoring wells and all of the surface water monitoring points specified in the approved monitoring plan.

(2) The semiannual report on water quality shall be submitted to the Department within 30 days of the close of the second and fourth quarter of each calendar year unless an alternative schedule is specified in the approved monitoring plan.

(3) Sampling shall occur in accordance with a schedule included in the approved monitoring plan.

(4) The person submitting the monitoring plan shall arrange for a qualified ground water scientist to sample, or to oversee qualified environmental technicians who sample, the monitoring wells.

(5) The parameters to be measured and their Practical Quantitation Limits (PQL) are listed in Section D, Table I of this regulation. The Department may require and approve an alternative or additional list of parameters or an alternative PQL for any parameter.

(6) The sampling, sample handling, analyses and reporting of analytical parameters shall be performed in accordance with the approved monitoring plan.

(7) The person submitting the monitoring plan shall arrange for a qualified independent laboratory or a laboratory which is otherwise acceptable to the Department to perform the analyses.

(8) The person submitting the monitoring plan shall arrange for a qualified ground water scientist or professional to evaluate the results and advise the person of any changes in water quality or any exceedance of a State or federal drinking water or ground water quality standard.

(9) The person submitting the monitoring plan shall include a complete copy of the laboratory data, and the qualified ground water scientist or professional's interpretive findings in each report.

(10) If analytical results from samples collected from any sources associated with a site or surrounding properties exceed a State or federal drinking water or ground water quality standard for the first time, the person submitting the monitoring plan shall notify the Department within 24 hours of receipt of the analytical data detecting the occurrence. Thereafter, if there is an increase above a State or federal drinking water or ground water quality standard, the person submitting the monitoring plan shall notify the Department within 24 hours of receipt of the analytical data detecting this occurrence.

(11) Upon detection of the exceedance of a State or federal drinking water or ground water quality standard for the first time, the person submitting the monitoring plan shall immediately resample each monitoring point in which the standard was exceeded to verify the initial detection. This resampling shall occur as soon as possible. If circumstances make immediate resampling impossible, the person submitting the monitoring plan shall notify the Department of the circumstances, and the Department may approve a longer period for resampling which shall be not later than 30 days following notification of the person of the initial exceedance.

(12) If the exceedance continues beyond the 30-day resampling period, the person submitting the monitoring plan shall submit a noncompliance report to the Department within 5 days, and notify the local health department of the exceedance. The Department may require the person submitting the monitoring plan to submit a clean up and containment plan or take such other action as it considers necessary to address the exceedance.

(13) All data for each monitoring well shall be summarized and presented in time series format. The data for each monitoring well shall be presented on a chart so that the water quality data for each parameter for each well can be observed simultaneously.

(14) All "J" values shall be reported. "J" values are analytical results that are below the PQL but can be estimated.

(15) Each report on water quality shall include a time series analysis of the data. The historical data from each monitoring well shall be presented in a tabular form in each report. The discussion shall emphasize historical trends in the data.

(16) Each report shall include a status report of the amount of coal combustion byproducts placed to date and within the last quarter, the status of reclamation within the permit area, and a summary of any complaints received within the last quarter.

(17) The Department may require that the person submitting the monitoring plan conduct surface water monitoring if streams, springs, or other surface water features are identified.

(18) Based on site conditions, the size and design of the construction project, and other considerations as determined by the Department, the Department may require other ground

water and surface water monitoring requirements it considers necessary to protect public health and the environment.

D. Table I—Monitoring Parameters.

ELEMENTS AND INDICATOR PARAMETERS PQL (ppm)

<i>Total Aluminum</i>	<i>0.05</i>
<i>Total Antimony</i>	<i>0.0020</i>
<i>Total Arsenic</i>	<i>0.0040</i>
<i>Total Barium</i>	<i>0.0100</i>
<i>Total Beryllium</i>	<i>0.0020</i>
<i>Total Boron</i>	<i>0.013</i>
<i>Total Cadmium</i>	<i>0.0040</i>
<i>Total Calcium</i>	<i>0.08</i>
<i>Total Chromium</i>	<i>0.0100</i>
<i>Total Cobalt</i>	<i>0.0100</i>
<i>Total Copper</i>	<i>0.0100</i>
<i>Total Iron</i>	<i>0.0050</i>
<i>Total Lead</i>	<i>0.0020</i>
<i>Total Lithium</i>	<i>0.016</i>
<i>Total Magnesium</i>	<i>0.004</i>
<i>Total Manganese</i>	<i>0.0100</i>

<i>Total Mercury</i>	<i>0.0002</i>
<i>Total Molybdenum</i>	<i>0.016</i>
<i>Total Nickel</i>	<i>0.0110</i>
<i>Total Potassium</i>	<i>0.39</i>
<i>Total Selenium</i>	<i>0.0120</i>
<i>Total Silver</i>	<i>0.0100</i>
<i>Total Sodium</i>	<i>0.2</i>
<i>Total Sulfate</i>	<i>0.38</i>
<i>Total Thallium</i>	<i>0.0020</i>
<i>Total Vanadium</i>	<i>0.0100</i>
<i>Total Zinc</i>	<i>0.0100</i>
<i>pH 0.1</i>	<i>(SU)</i>
<i>Acidity</i>	<i>1</i>
<i>Alkalinity</i>	<i>1</i>
<i>Hardness</i>	<i>0.5</i>
<i>Chloride</i>	<i>0.39</i>
<i>Specific conductance</i>	<i>1</i>
<i>Nitrate</i>	<i>0.06</i>
<i>Chemical oxygen demand</i>	<i>1</i>
<i>Turbidity</i>	<i>0.11 (NTU)</i>

<i>Ammonia</i>	<i>1</i>
<i>Total Suspended Solids</i>	<i>1</i>
<i>Total dissolved solids</i>	<i>10</i>

10. Reporting

A. A person who beneficially uses or otherwise uses coal combustion byproducts under this chapter shall maintain records of, and deliver to the Department by March 1 of each year an annual report that contains, the following:

(1) The name, address, and telephone number of the generator of any coal combustion byproducts used;

(2) The type and amount of coal combustion byproducts received from each generator of coal combustion byproducts used;

(3) A description of the manner in which the coal combustion byproducts were used, including the volume of coal combustion byproducts used, and the locations where coal combustion byproducts were used if known.

(4) All leachability or solids analysis data collected, if otherwise required by this chapter; and

(5) Any other information relating to the use that may be requested by the Department.

B. A person using coal combustion byproducts shall maintain all records required by §A of this regulation for a minimum of 3 years and shall make the records available to the Department upon request.

C. Except as otherwise provided by law, the Department may publish on its website or elsewhere, or otherwise make available to the public, any information that it gathers from the annual reports or records provided under this regulation.

